6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R06-OAR-2021-0215; FRL-8696-01-R6]

Air Plan Approval; Louisiana; Regional Haze Five-Year Progress Report State Implementation Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is proposing to approve a revision to a State Implementation Plan (SIP) submitted by the Secretary of the Louisiana Department of Environmental Quality (LDEQ) on March 25, 2021. The SIP submittal addresses requirements of federal regulations that direct the State to submit a periodic report that assesses progress toward regional haze reasonable progress goals (RPGs) and includes a determination of adequacy of the existing implementation plan.

DATES: Written comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: Submit comments, identified by Docket No. EPA-R06-OAR-2021-0215, at *https://www.regulations.gov* or via email to *grady.james@epa.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit any information electronically that is considered Confidential Business Information (CBI) or any other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment with multimedia submissions and should include all discussion points desired. The EPA will generally not consider comments or their contents located outside

of the primary submission (i.e. on the web, cloud, or other file sharing systems). For additional submission methods, please contact James E. Grady, (214) 665-6745, *grady.james@epa.gov*. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit https://www.epa.gov/dockets/commenting-epa-dockets.

Docket: The index to the docket for this action is available electronically at www.regulations.gov. While all documents in the docket are listed in the index, some information may not be publicly available due to docket file size restrictions or content (e.g., CBI).

FOR FURTHER INFORMATION CONTACT: James E. Grady, EPA Region 6 Office, Regional Haze and SO_2 Section, 1201 Elm Street, Suite 500, Dallas TX 72570, 214-665-6745; *grady.james@epa.gov*. Out of an abundance of caution for members of the public and our staff, the EPA Region 6 office will be closed to the public to reduce the risk of transmitting COVID-19. We encourage the public to submit comments via https://www.regulations.gov, as there will be a delay in processing mail and no courier or hand deliveries will be accepted. Please call or e-mail the contact listed above if you need alternative access to material indexed but not provided in the docket.

SUPPLEMENTARY INFORMATION: Throughout this document "we," "us," or "our" mean "the EPA."

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I. Background

A. The Regional Haze Program

Regional haze is visibility impairment that occurs over a wide geographic area primarily from the pollution of fine particulates ($PM_{2.5}$)[1] emitted into the air from a variety of sources.

[1] Fine particles are less than or equal to 2.5 microns (μm) in diameter and usually form secondary in nature indirectly from other sources. Particles less than or equal to 10 μm in diameter are referred to as PM_{10}. Particles

These fine particulates which cause haze consist of sulfates (SO_4^{2-}), nitrates (NO_3^-), organic carbon (OC), elemental carbon (EC), and soil dust.[2] $PM_{2.5}$ precursors consist of sulfur dioxide (SO_2), nitrogen oxides (NO_X), ammonia (NH_3), and volatile organic compounds (VOCs). Airborne $PM_{2.5}$ can scatter and absorb the incident light and, therefore, lead to atmospheric opacity and horizontal visibility degradation which limits visual distance and reduces color, clarity, and contrast of view. $PM_{2.5}$ can cause serious adverse health effects and mortality in humans. It also contributes to environmental effects such as acid deposition and eutrophication. Emissions that affect visibility include a wide variety of natural and man-made sources. Natural sources can include windblown dust from dust storms and soot from wildfires. Man-made sources can include major and minor stationary sources, mobile sources, and area sources. Reducing $PM_{2.5}$ and its precursor gases in the atmosphere is an effective method of improving visibility.

Data from the existing visibility monitoring network, "Interagency Monitoring of Protected Visual Environments" (IMPROVE), shows that visibility impairment caused by air pollution occurs virtually all of the time at most national parks and wilderness areas. In 1999, the average visual range[3] in many Class I areas (i.e., national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the western United States was 100-150 kilometers (km), or about one-half to two-thirds of the visual range that would exist under estimated natural conditions.[4] In most of the eastern Class I areas of the United States, the average visual range was less than 30 km, or about one-fifth of the visual range that would exist

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greater than $PM_{2.5}$ but less than PM_{10} are referred to as coarse mass. Coarse mass can contribute to regional haze as well and is made up of primary particles directly emitted into the air. Fine particles tend to be man-made, while coarse particles tend to originate from natural events like wildfires and dust storms. Coarse mass settles out from the air more rapidly than fine particles and usually will be found relatively close to emission sources. Fine particles can be transported long distances by wind and can be found in the air thousands of miles from where they were formed.

[2] Organic carbon (OC) can be emitted directly as particles or formed through reactions involving gaseous emissions. Elemental carbon (EC), in contrast to organic carbon, is exclusively of primary origin and emitted by the incomplete combustion of carbon-based fuels. Elemental carbon particles are especially prevalent in diesel exhaust and smoke from wild and prescribed fires.

[3] Visual range is the greatest distance, in km or miles, at which a dark object can be viewed against the sky by a typical observer.

[4] 64 FR 35715 (July 1, 1999).

under estimated natural conditions. CAA programs have reduced emissions of some haze-causing pollution, lessening some visibility impairment, and resulting in partially improved average visual ranges.[5]

In section 169A of the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the prevention of any future, and the remedying of any existing, visibility impairment in mandatory Class I Federal areas where impairment results from manmade air pollution.[6] Congress added section 169B to the CAA in 1990 that added visibility protection provisions, and the EPA promulgated final regulations addressing regional haze as part of the 1999 Regional Haze Rule, which was most recently updated in 2017.[7] The Regional Haze Rule revised the existing 1980 visibility regulations and established a more comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in the EPA's broader visibility protection regulations at 40 CFR 51.300 through 51.309. The regional haze regulations require states to demonstrate reasonable progress toward meeting the national goal of a return to natural visibility conditions for mandatory Class I Federal areas both within and outside states by 2064. The CAA requirement in section 169A(b)(2) to submit a regional haze SIP applies to all fifty states, the District of Columbia, and the Virgin Islands. States were required to submit the first

[5] An interactive "story map" depicting efforts and recent progress by EPA and states to improve visibility at national parks and wilderness areas may be visited at: http://arcg.is/29tAbS3.

[6] Mandatory Class I Federal areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. The EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility was identified as an important value. The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. Although states and tribes may designate additional areas as Class I, the requirements of the visibility program set forth in the CAA applies only to "mandatory Class I Federal areas." Each mandatory Class I Federal area is the responsibility of a "Federal Land Manager." When the term "Class I area" is used in this action, it means "mandatory Class I Federal areas." [See 44 FR 69122, November 30, 1979 and CAA Sections 162(a), 169A, and 302(i)].

[7] See the July 1, 1999 Regional Haze Rule final action (64 FR 35714), as amended on July 6, 2005 (70 FR 39156), October 13, 2006 (71 FR 60631), June 7, 2012 (77 FR 33656) and on January 10, 2017 (82 FR 3079).

implementation plan addressing visibility impairment caused by regional haze no later than December 17, 2007.[8]

Section 169A(b)(2)(A) of the CAA directs states to evaluate the use of Best Available Retrofit Technology (BART) controls at certain categories of existing major stationary sources[9] built between 1962 and 1977. These large, often under-controlled, older stationary sources are required to procure, install, and operate BART controls to address visibility impacts from them. Under the Regional Haze Rule, any of these BART-eligible sources[10] that are reasonably anticipated to cause or contribute to visibility impairment in a Class I area are determined to be subject-to-BART.[11] States are directed to conduct BART determinations for each source classified as subject-to-BART. 40 CFR 51.308(e)(1)(ii)(A) requires states (or EPA in the case of a FIP) to identify the level of control representing BART after considering the five statutory factors set out in CAA section 169A(g)(2). States must establish emission limits, a schedule of compliance, and other measures consistent with the BART determination process for each source subject-to-BART. In lieu of requiring source-specific BART controls, states also have the flexibility to adopt alternative measures, as long as the alternative provides greater reasonable progress toward improving visibility than BART. Namely, the alternative must be "better than BART."[12]

B. Previous Actions on Louisiana Regional Haze

LDEQ submitted its initial regional haze SIP on June 13, 2008, to address the requirements of the first regional haze implementation period. EPA acted on the 2008 regional

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[8] See 40 CFR 51.308(b). The EPA's regional haze regulations require subsequent updates to the regional haze SIPs. 40 CFR 51.308(g)-(i).

[9] See 42 U.S.C. 7491(g)(7) (listing the set of "major stationary sources" potentially subject-to-BART)

[10] See 40 CFR 51 Appendix Y, II. How to Identify BART-eligible Sources.

[11] Under the BART Guidelines, states may select a visibility impact threshold, measured in deciviews (dv), below which a BART-eligible source would not be expected to cause or contribute to visibility impairment in any Class I area. The state must document this threshold in the SIP and state the basis for its selection of that value. Any source with visibility impacts that model above the threshold value would be subject to a BART determination review. The BART Guidelines acknowledge varying circumstances affecting different Class I areas. States should consider the number of emission sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts. Any visibility impact threshold set by the state should not be higher than 0.5 dv. See 40 CFR 51, Appendix Y, section III.A.1.

[12] The required content of BART alternative measures is codified at 40 CFR 51.308(e)(2).

haze SIP submittal in two separate actions. The first EPA action on the 2008 regional haze SIP was a limited disapproval[13] based on the June 7, 2012, revision to the Regional Haze Rule and deficiencies arising from a remand of the Clean Air Interstate Rule (CAIR) by the U.S. Court of Appeals for the District of Columbia. The remand affected LDEQ's source specific EGU BART requirements for SO_2 and NO_X because the 2008 Louisiana Regional Haze SIP relied on participation in CAIR as an alternative to meet the EGU SO_2 and NO_X BART requirements.[14] It was determined in the June 7, 2012, rule revision that CSAPR would provide for greater reasonable progress than BART, so that allowed CSAPR participation to be used as a BART alternative to source-specific SO_2 and NO_X BART for EGUs, on a pollutant-specific basis.[15] LDEQ established reliance upon CSAPR for ozone (O_3) season NO_X as an alternative to meet the NO_X BART requirements for their EGU sources and the State addressed SO_2 and PM BART requirements for EGUs in separate submittals, as described in subsequent paragraphs.

On July 3, 2012, EPA issued a second action on the 2008 Louisiana Regional Haze SIP which was a partial approval/disapproval[16] because the SIP submittal met some but not all of the applicable requirements of sections 169A and 169B of CAA and regional haze provisions in 40 CFR 51.300 through 51.308. In that action, we disapproved LDEQ's long-term strategy because it relied on deficient BART analyses for four non-EGU sources and did not reflect appropriate BART emissions reductions from those facilities.[17]

On August 11, 2016, LDEQ submitted a SIP revision which addressed the deficiencies related to SO_2, NO_X, and PM BART for the four non-EGU facilities: Sid Richardson, Phillips 66 Company-Alliance Refinery, Mosaic, and Eco Services, LLC. We proposed approval of the August 11, 2016 SIP revision for the BART determinations at these non-EGU facilities on October 27, 2016.[18] Based on the BART analysis and modeling provided by Sid Richardson,

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[13] 77 FR 33642 (June 7, 2012).
[14] 40 CFR 51.308(e)(4) (2006).
[15] 77 FR 33642, 33656 (June 7, 2012).
[16] 77 FR 39425 (July 3, 2012), available at https://www.regulations.gov in docket EPA-R06-OAR-2008-0510.
[17] 77 FR 39426 (July 3, 2012).
[18] 81 FR 74750 (October 27, 2016). Proposed approval for the BART determinations for non-EGU facilities.

LDEQ concluded that the facility was not subject-to-BART because its modeled visibility impacts were less than 0.5 deciviews (dv).[19] We proposed to approve this determination for Sid Richardson. We also proposed approval of LDEQ's determination that the current controls and operating conditions for the subject-to-BART units at the Phillips 66 Company-Alliance Refinery constituted SO_2, NO_X, and PM BART.[20] We further proposed approval of LDEQ's determination that current controls and operating conditions at the Mosaic facility constituted SO_2, NO_X, and PM BART.[21] Finally, we proposed approval of LDEQ's determination that the current controls and operating conditions at the Eco Services, LLC facility constituted SO_2 BART.[22]

On February 10, 2017, LDEQ submitted a SIP revision that addressed the deficiencies related to SO_2 and PM BART for the EGU facilities. The SIP submittal also relied on CSAPR for O_3 season NO_X to satisfy NO_X BART for EGU sources. Seventeen EGU facilities were identified as BART-eligible and LDEQ identified seven of those EGU facilities as being subject-to-BART and required to install, operate, and maintain BART controls: Cleco Brame Energy Center and six different Entergy facilities (Little Gypsy, Ninemile Point, Waterford, Willow Glen, Michoud, and Nelson). On May 19, 2017, we proposed approval of the February 10, 2017, submittal for the BART determinations for these EGU facilities with the exception of the portion related to

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[19] A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. The preamble to the Regional Haze Rule provides additional details about the deciview (64 FR 35714, 35725, July 1, 1999).

[20] On December 5, 2005, Conoco Phillips, the United States of America and the State of Louisiana, entered into a consent decree as part of the National Refinery Initiative for Alliance. See *U.S. et al v ConocoPhillips Company,* Civil Action No. H-05-0258 (S.D. Tx). EPA approved Louisiana's BART determination that the controls and conditions required by the consent decree satisfy SO_2, NO_X, and PM BART. In order to make the limits enforceable for Regional Haze SIP purposes, Phillips 66 and LDEQ entered into to an AOC to mirror the limitations imposed by the consent decree.

[21] On December 23, 2009, Mosaic entered into a consent decree with the EPA, LDEQ and other parties. See *U.S. et al v. Mosaic Fertilizer, LLC*, Civil Action No. 09-6662 (E.D. La). EPA approved LDEQ's BART determination that the controls and conditions required by the consent decree satisfy SO_2, NO_X, and PM BART. In order to make the limits enforceable for regional haze SIP purposes, Mosaic and LDEQ entered into to an AOC to mirror the limitations imposed by the consent decree.

[22] On July 23, 2007, Eco Services entered into a consent decree with the EPA, LDEQ and other parties. See *U.S. et al v. Rhodia Inc.,* Civil Action No. 2:07CV134 WL (H.D. In). EPA approved LDEQ's BART determination that the controls and conditions required by the consent decree satisfy SO_2 BART. In order to make the limits enforceable for regional haze SIP purposes, Eco Services and LDEQ entered into an AOC to mirror the limitations imposed by the consent decree.

Entergy's Nelson facility.[23] We also approved controls and conditions for two coal-fired units required by a consent decree[24] for Big Cajun II, a BART eligible EGU facility that screened out from being subject-to-BART because its modeled visibility impacts were less than 0.5 dv. Louisiana Generating, who operates Big Cajun II, entered into an agreed order on consent (AOC) with LDEQ to make the existing control requirements and maximum daily emission limits for SO_2, NO_X, $PM_{2.5}$ and PM_{10} from the consent decree permanent and federally enforceable for the two coal-fired units. For the facilities subject-to-BART, we proposed to approve LDEQ's SO_2 and PM BART determinations for units at Cleco's Brame Energy Center and at four Entergy facilities which included Willow Glen, Little Gypsy, Ninemile Point, and Waterford plants. We also proposed to approve the State's AOCs for each of these five facilities. LDEQ provided additional information from Entergy indicating that the Entergy Michoud units would be decommissioned, as reflected in an email dated October 9, 2017, submitted by LDEQ to supplement its February 2017 SIP revision. As a result, we proposed to approve the SIP's finding that SO_2, NO_X, and PM BART were satisfied for the Michoud units since they were no longer in operation. Lastly, we proposed to find that the EGU NO_X BART requirements would be satisfied by our determination that LDEQ's participation in CSAPR's O_3 season NO_X program was a permissible alternative to source-specific NO_X BART.[25]

On June 20, 2017, LDEQ submitted a SIP revision related to Entergy's Nelson facility. On July 13, 2017, we proposed to approve that SIP revision along with the remaining portion of the February 2017 SIP revision that addressed SO_2 and PM BART for the Nelson facility.[26] Specifically, we proposed to approve the LDEQ SO_2 and PM BART determinations for Nelson Units 6 and 4, and the Unit 4 auxiliary boiler, and the AOC that makes the emission limits that

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[23] 82 FR 22936 (May 19, 2017). Proposed approval for the BART determinations for EGU facilities.
[24] On March 6, 2013, Louisiana Generating entered a consent decree establishing emission limits for SO_2, NO_X, and PM BART for several CAA violations at Big Cajun II. See *U.S. et al v. Louisiana Generating, LLC*, Civil Action No. 09-100-JJB-RLB (M.D. La.).
[25] We could not finalize that portion of the proposed SIP approval until we finalized the proposed finding that CSAPR continued to be better than BART (81 FR 78954) because finalization of that proposal provided the basis for LDEQ to rely on CSAPR participation as an alternative to source-specific EGU BART for NO_X.
[26] 82 FR 32294 (July 13, 2017) Proposed approval for BART determination for Nelson Unit 6.

represent SO_2 and PM BART permanent and enforceable for the purposes of regional haze. On August 24, 2017, we received a letter from LDEQ explaining their intent to revise the compliance date in the SIP revision for Nelson Unit 6 based on Entergy's request for a three-year compliance deadline to achieve the proposed SO_2 BART limit for Nelson Unit 6. On September 26, 2017, we supplemented our proposed approval of the SO_2 BART determination for Nelson by proposing to approve the three-year compliance date. On October 26, 2017, we received LDEQ's final SIP revision addressing Nelson, including a final AOC with emission limits and a SO_2 compliance date three years from the effective date of the EPA's final approval of the SIP revision.

On December 21, 2017, EPA finalized approval[27] of the Louisiana Regional Haze SIP as meeting all applicable provisions of the CAA and EPA regional haze regulations. The final action approved the 2016 SIP revision,[28] and the two 2017 SIP revisions[29] as supplemented with respect to 40 CFR 51.308(e) and addressed all deficiencies identified in our two previous June 7, 2012, and July 3, 2012, actions of the 2008 Louisiana Regional Haze SIP submission. We finalized approval of the SO_2, NO_X, and PM BART determinations for the subject-to-BART non-EGU facilities (Phillips 66 Company-Alliance Refinery, Mosaic, and Eco Services, LLC). We finalized our determination that the emission limits and operating conditions reflected in the AOC's between LDEQ and each non-EGU facility meet the BART requirements. We finalized the reliance upon CSAPR for NO_X BART requirements for subject-to-BART EGU facilities. We finalized the SO_2 and PM BART determinations for the subject-to-BART EGU facilities (Cleco Brame Energy Center and five Entergy facilities: Waterford, Willow Glen, Ninemile, Little Gypsy, and Nelson). We finalized our determination that the emission limits and operating conditions listed in the various AOCs between LDEQ and each EGU facility meet the applicable

[27] 82 FR 60520 (December 21, 2017), available at https://www.regulations.gov/in docket EPA-R06-OAR-2017-0129. EPA's approval of these SIP revisions became effective on January 22, 2018.
[28] 81 FR 74750 (October 27, 2016). Proposed approval for the BART determinations for non-EGU facilities.
[29] 82 FR 22936 (May 19, 2017) Proposed approval for the BART determinations for EGU facilities and 82 FR 32294 (July 13, 2017) Proposed approval for BART determination for Nelson Unit 6.

BART requirements. We finalized the following BART eligible sources being approved as not subject-to-BART because their contribution to visibility impairment fell below the contribution threshold selected by the State: Terrebonne Parish Consolidated Government Houma Generating Station (Houma), Louisiana Energy and Power Authority Plaquemine Steam Plant (Plaquemine), Lafayette Utilities System Louis "Doc" Bonin Generating Station, Cleco Teche, Entergy Sterlington, NRG Big Cajun I, and NRG Big Cajun II. In addition, we approved the core requirements for regional haze SIPs found in 40 CFR 51.308(d) such as: The requirement to establish reasonable progress goals, the requirement to determine the baseline and natural visibility conditions, and the requirement to submit a long-term strategy; and the BART requirements for regional haze visibility impairment with respect to emissions of visibility impairing pollutants in 40 CFR 51.308(e). The State fulfilled all outstanding obligations with respect to the Louisiana regional haze program for the first planning period.

C. Louisiana's Regional Haze Progress Report SIP

Under 40 CFR 51.308(g), each state was required to submit a progress report that evaluates progress towards the RPGs for each Class I area within and outside the state which may be affected by emissions from within the state. In addition, 40 CFR 51.308(h) requires states to submit, at the same time as the progress report, a determination of the adequacy of the state's existing regional haze implementation plan.[30] The progress report for the first planning period is due five years after submittal of the initial regional haze SIP and must take the form of a SIP revision. Louisiana submitted its initial regional haze SIP on June 13, 2008.

On March 25, 2021, Louisiana submitted its progress report to the EPA in the form of a SIP revision under 40 CFR 51.308. As described in further detail in section II of this proposed rulemaking, to address the progress report requirements, the State provided: (1) a description of

[30] The Regional Haze Rule requires states to provide in the progress report an assessment of whether the current "implementation plan" is sufficient to enable the states to meet all established RPGs under 40 CFR 51.308(g). The term "implementation plan" is defined for purposes of the Regional Haze Rule to mean any SIP, FIP, or Tribal Implementation Plan. As such, the Agency may consider measures in any issued FIP as well as those in a state's regional haze plan in assessing the adequacy of the "existing implementation plan" under 40 CFR 51.308(g) and (h).

the status of measures in the approved regional haze SIP; (2) a summary of emission reductions achieved; (3) an assessment of visibility conditions for the one Class I area in Louisiana and for one Class I area in Arkansas; (4) an analysis tracking the changes in emissions from sources and activities within the state; (5) an assessment of any significant changes in anthropogenic emissions within or outside the state that have limited or impeded progress in reducing pollutant emissions and improving visibility; (6) an assessment of whether the approved regional haze SIP elements and strategies are sufficient to enable the State (and other states with Class I areas affected by emissions from the state) to meet all established RPGs; (7) a review of the State's visibility monitoring strategy; and (8) a determination of adequacy of the existing implementation plan.

II. Evaluation of Louisiana's Regional Haze Progress Report SIP Revision

On March 25, 2021, the EPA received Louisiana's periodic report on progress for the State's regional haze SIP in the form of a SIP revision. That submission is the subject of this proposed approval. The periodic report for the first implementation period assessed visibility progress toward the 2018 RPG for the one Class I area in Louisiana and also assessed visibility progress for one Class I area in Arkansas affected by emissions from Louisiana. The recent data shows visibility improvement that is exceeding the visibility goals set for 2018 and emission trends indicate that SO_2, NO_X, and PM emissions have all been decreasing. The EPA is, therefore, proposing to approve Louisiana's progress report on the basis that it satisfies the requirements of 40 CFR 51.308(g) and (h), as explained in further detail in each subsequent section.

A. Class I Areas

Louisiana has one Class I area within its borders that is addressed in the progress report: the Breton National Wilderness Refuge (Breton).[31] Visibility impairment at Louisiana's Class I

[31] The Breton National Wilderness Refuge has a total of 5,000 acres located thirty miles off the southeast coast of Louisiana. A small section of Breton National Wildlife Refuge is located on Breton Island which consists of two

area was tracked in units of deciviews, which is related to the cumulative sum of visibility impairment from individual aerosol species as measured by monitors in the IMPROVE Network. The State used the Breton IMPROVE monitor as well as data from a nearby monitoring site, the Gulfport SEARCH site, to supplement the Breton monitoring data. Through collaboration with the Central Regional Air Planning Association (CENRAP), LDEQ worked with the central states to assess state-by-state contributions to visibility impairment in specific Class I areas in Louisiana and those affected by emissions from Louisiana in development of the Regional Haze SIPs for the first planning period. LDEQ indicated that one Class I areas outside Louisiana's borders at Caney Creek Wilderness area[32] in southwest Arkansas was impacted by emissions from within Louisiana. In the ensuing sections, we discuss how the State addressed the progress report requirements under 40 CFR 51.308(g) and (h) for these Class I areas, and we show our analysis and proposed determination as to whether the State satisfied the requirements.

B. Status of Implementation of Measures

In its progress report, Louisiana summarized the status of the implementation of measures that were relied upon by Louisiana in its regional haze plan under 40 CFR 51.308(g) to control visibility impairing pollutants at affected class I areas. The control measures identified by the State in the progress report are as follows:

- Non-EGU Controls
- EGU Controls
- CAIR and CSAPR
- Smoke Management Plan (SMP)
- Additional Federal Measures

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adjacent islands (north and south) with a combined length of about three miles and a width of less than one mile. The greater portion of the refuge consists of the Chandeleur Islands, an approximately twenty-mile-long crescent of land lying north of Breton. Between Breton and Chandeleur are more islands owned by the state and managed by the refuge.

[32] Caney Creek Wilderness is located in Polk County, Arkansas, and covers 14,460 acres on the southern edge of the Ouachita National Forest and protects a rugged portion of the Ouachita Mountains.

1. Non-EGU Controls

Four non-EGU facilities were identified as BART-eligible and LDEQ identified three of them as subject-to-BART and required to install, operate, and maintain BART controls. The three non-EGUs identified as subject-to-BART were Phillips 66 Company-Alliance Refinery (formerly ConocoPhillips), Mosaic Fertilizer LLC - Uncle Sam Plant; Eco-Services Operations, LLC (formerly Rhodia). EPA approved the SO_2, NO_x, and PM BART determinations for these non-EGU facilities in the December 21, 2017 final action[33] along with their associated AOC requirements[34] that made these control measures permanent and enforceable.

a. Phillips 66 - Alliance Refinery

Phillips 66 installed SO_2, NO_X, and PM_{10} controls[35] required by the December 5, 2005, consent decree[36] for 22 sources. EPA approved LDEQ's BART determination that the controls and conditions required by the consent decree satisfied BART. In order to make the limits enforceable for regional haze SIP purposes, Phillips 66 and LDEQ entered into AOC No. AE-AOC-14-00211A to mirror the SO_2, NO_X, and PM_{10} limits imposed by the consent decree with a compliance date of April 29, 2016. The EPA final approval date was December 21, 2017, (82 FR 60520).

b. Mosaic Fertilizer, LLC

Mosaic Fertilizer, LLC installed SO_2, NO_X, PM_{10}, and $PM_{2.5}$ controls[37] required by its December 23, 2009, consent decree[38] for thirteen sources that are a part of three sulfuric acid operation trains (A, D, and E), of which trains A and D were subject-to-BART. EPA approved LDEQ's BART determination that the controls and conditions required by the consent decree satisfy BART. In order to make the limits enforceable for regional haze SIP purposes, Mosaic

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[33] 82 FR 60520.
[34] Phillips 66 AOC No. AE–AOC–14–00211A; Mosaic Fertilizer, LLC AOC No. AE- AOC-14-00274A; and Eco Services Operations Corp. AOC No. AE-AOC-14-00957.
[35] See Table 2: Phillips 66 AOC Conditions (pages 7-9) of the State's progress report.
[36] *U.S. et al v ConocoPhillips Company,* Civil Action No. H-05-0258 (S.D. Tx).
[37] See Table 3: Mosaic AOC Conditions (pages 11-12) of the State's progress report.
[38] *U.S. et al v. Mosaic Fertilizer, LLC*, Civil Action No. 09-6662 (E.D. La).

Fertilizer, LLC and LDEQ entered into AOC No. AE- AOC-14-00274A to mirror the SO_2, NO_X, PM_{10}, and $PM_{2.5}$ limits imposed by the consent decree with a compliance deadline of June 6, 2016. The EPA final approval date was December 21, 2017 (82 FR 60520).

c. Eco Services Operations Corp.

Eco Services Operations Corp. installed SO_2 controls[39] required by its July 23, 2007, consent decree[40] for two sulfuric acid production trains, Unit 1 and Unit 2 (only Unit 2 is subject-to-BART). The consent decree required a scrubber to be installed on each of the units to control SO_2 emissions. EPA approved LDEQ's BART determination that the controls and conditions required by the consent decree satisfy BART. In order to make the limits enforceable for regional haze SIP purposes, Eco Services Operations Corp. and LDEQ entered into AOC No. AE-AOC-14-00957 to mirror the SO_2 limits imposed by the consent decree with a compliance deadline of August 8, 2016. The EPA final approval date was December 21, 2017 (82 FR 60520).

2. EGU Controls

Seventeen EGU facilities were identified as BART-eligible and LDEQ identified seven of those EGU facilities as being subject-to-BART and required to install BART controls: Cleco Brame Energy Center and six different Entergy facilities (Little Gypsy, Ninemile Point, Waterford, Willow Glen, Michoud, and Nelson). EPA approved the SO_2 and PM BART determinations for these EGU facilities in the December 21, 2017, final action[41] along with their associated AOC requirements that made the control measures permanent and enforceable. In addition, as described below, EPA approved emission limits for NRG Big Cajun II, a BART eligible EGU source that screened out of being subject-to-BART.

[39] See Table 4: Eco Services AOC Conditions (page 14) of the State's progress report.
[40] *U.S. et al v. Rhodia Inc.,* Civil Action No. 2:07CV134 WL (H.D. In).
[41] 82 FR 60520 (December 21, 2017).

a. NRG Big Cajun II

NRG Big Cajun II installed SO_2, NO_X, PM_{10}, and $PM_{2.5}$ controls[42] required by its March 6, 2013, consent decree[43] for two BART-eligible EGU coal-fired sources (Unit 1 and Unit 2). The consent decree required Louisiana Generating to refuel coal-fired Unit 2 to natural gas and install and continuously operate dry sorbent injection (DSI) at Unit 1 while maintaining a thirty-day rolling average SO_2 emission rate of no greater than 0.380 lb/MMBtu by no later than April 15, 2015. In addition to requiring DSI, the consent decree required Louisiana Generating to retire, refuel, repower, or retrofit Unit 1 by no later than April 1, 2025. Louisiana Generating is required to notify EPA of which option it will select to comply with this condition no later than December 31, 2022. LDEQ's modeling demonstrated that, based on these existing controls and enforceable emission limits, Big Cajun II contributes less than 0.5 dv at impacted Class I areas, and therefore the facility is not subject to BART. NRG Big Cajun II and LDEQ agreed to make the consent decree limits enforceable for regional haze SIP purposes, and entered into an AOC (unnumbered) to mirror the SO_2, NO_X, PM_{10}, and $PM_{2.5}$ limits imposed by the consent decree with a compliance deadline of February 9, 2017. The EPA final approval date was December 21, 2017 (82 FR 60520).

b. Cleco - Brame Energy Center

The Cleco Brame Energy Center addressed SO_2 and PM_{10} BART controls for two subject-to-BART EGU boilers, Nesbitt 1 and Rodemacher 2 units. The Nesbitt 1 boiler was permitted to burn natural gas or oil and did not have any air pollution controls installed. Cleco committed to burn only natural gas until a five-factor BART analysis for the fuel-oil-firing scenario was submitted to LDEQ and included in an EPA approved SIP revision. To make the prohibition on fuel-oil usage at this unit enforceable, Cleco and LDEQ entered an AOC (unnumbered) that established enforceable SO_2 and PM_{10} limits, consistent with the exclusive

[42] See Table 5: Sources subject-to-BART (page 15) of the State's progress report.
[43] *U.S. et al* v. *Louisiana Generating, LLC,* Civil Action No. 09-100-JJB-RLB (M.D. La.).

use of natural gas for the Nesbitt 1 boiler. The Rodemacher 2 boiler has an enhanced DSI system for SO_2 control. The Rodemacher 2 boiler also has an electrostatic precipitator (ESP) and a fabric filter baghouse downstream of the DSI system for PM control. These controls offer the necessary controls for SO_2 and PM_{10} BART for the Rodemacher 2 boiler. Therefore, emission limits were established consistent with these controls and included in the AOC to make the limits enforceable for regional haze purposes. The AOC also allowed the Rodemacher 2 boiler to meet the SO_2 and PM_{10} emissions limits by conversion to natural gas only, unit retirement, or another means of achieving compliance with the emission limits. The compliance deadline of the AOC was February 9, 2017.[44] The EPA final approval date was December 21, 2017 (82 FR 60520).

c. Entergy - Willow Glen

Entergy addressed SO_2 and PM_{10} BART controls for multiple EGU boiler units subject - to-BART (Units 2, 3, 4, 5, and the Auxiliary Boiler) at the Willow Glen facility. Each was permitted to burn fuel oil, but Entergy agreed to an AOC (unnumbered) signed February 9, 2017, to require a five-factor BART analysis for the fuel-oil firing scenario to be submitted to LDEQ and included in an EPA approved SIP revision before fuel-oil combustion would occur at the Willow Glen facility. No additional controls for the Willow Glen units would be required when burning natural gas. EPA approved LDEQ's determination that SO_2 and PM_{10} BART for Willow Glen was addressed by this operational scenario.[45] However, as of May 31, 2016, Willow Glen was decommissioned, and the Title V operating permit was rescinded on June 6, 2018. Emissions have ceased since 2016, so the facility remains in compliance with the AOC which had a compliance deadline of February 9, 2017. The EPA final approval date was December 21, 2017 (82 FR 60520).

[44] See Table 6: Brame Summary of AOC Conditions (page 17) of the State's Progress Report.
[45] 82 FR 22943 (May 19, 2017).

d. Entergy - Little Gypsy

Entergy addressed SO_2 and PM_{10} BART controls for three subject-to-BART EGU boiler units at its Little Gypsy facility (Units 2, 3, and the Auxiliary Boiler). The Unit 2 boiler was permitted to burn natural gas as its primary fuel, and No. 2 and No. 4 fuel oil as secondary fuels. The Unit 3 boiler burns natural gas but was also permitted to burn fuel oil. The auxiliary boiler for Unit 3 is permitted to burn only natural gas. While no additional controls were determined to be necessary when burning natural gas, Entergy agreed to switch to ultra-low sulfur diesel (ULSD) fuel oil. In order to make the use of ULSD enforceable for regional haze purposes, LDEQ and Entergy entered into an AOC with a compliance deadline of February 13, 2017, limiting fuel oil to ULSD. The EPA final approval date was December 21, 2017 (82 FR 60520).

e. Entergy - Ninemile Point

Entergy addressed SO_2 and PM_{10} BART controls for two subject-to-BART EGU boiler units at its Ninemile Point facility (Units 4 and 5). The Unit 4 boiler burned primarily natural gas and No. 2 and No. 4 fuel oil. The Unit 5 boiler burned primarily natural gas and No. 2 and No. 4 fuel oil. While no additional controls were determined to be necessary when burning natural gas, Entergy agreed to switch to ULSD fuel oil. In order to make the use of ULSD enforceable for regional haze purposes, LDEQ and Entergy entered into an AOC (unnumbered) with a compliance deadline of February 9, 2017, limiting fuel oil to ULSD with a sulfur content of 0.0015%. The EPA final approval date was December 21, 2017 (82 FR 60520).

f. Entergy - Waterford 1 and 2

Entergy addressed SO_2 and PM_{10} BART controls for three subject-to-BART EGU boiler units at its Waterford 1 & 2 Generating Plant facility (Units 1 and 2 and the auxiliary boiler). The Unit 1 boiler is an EGU boiler that burned primarily natural gas and No. 6 fuel oil as its secondary fuel. The Unit 2 boiler is an EGU boiler that burned primarily natural gas and No. 6 fuel oil as its secondary fuel. The auxiliary boiler burns only natural gas. While no additional controls were determined to be necessary when burning natural gas, Entergy agreed to switch to

fuel oil with a lower sulfur content. In order to make the lower sulfur content fuel enforceable for regional haze purposes, LDEQ and Entergy entered into an AOC with a compliance deadline of February 9, 2017, limiting fuel oil to a sulfur content of 1% or less. The EPA final approval date was December 21, 2017 (82 FR 60520).

g. Entergy - Michoud

Entergy addressed SO_2, NO_X, and PM BART controls for two subject-to-BART EGU boiler units at its Michoud Generating Plant (Units 2 and 3). In a letter dated August 10, 2016, Entergy elected to permanently retire Units 2 and 3 effective June 1, 2016. Subsequently, the Title V Operating Permit was modified to remove these units effective January 31, 2019. All SO_2, PM, and NO_X emissions from Units 2 and 3 at Michoud have ceased after 2016 and the boilers are no longer in operation. The EPA final approval date was December 21, 2017 (82 FR 60520).

h. Entergy - Nelson

Entergy addressed SO_2 and PM_{10} BART controls for three subject-to-BART boiler units at its Roy S. Nelson steam electric power generating facility (Unit 4 and 6 Boilers, and Unit 4 Auxiliary Boiler). The required SO_2 and PM_{10} BART controls preclude fuel-oil combustion at Unit 4 and the Unit 4 Auxiliary boiler. To make the prohibition on fuel-oil usage enforceable for regional haze purposes, Entergy and LDEQ entered into an AOC (unnumbered) that established that before fuel-oil firing is allowed to take place at Unit 4 and the auxiliary boiler, a revised BART determination must be promulgated for SO_2 and PM_{10} for the fuel oil firing scenario through a Federal Implementation Plan (FIP) or a SIP revision approved by the EPA that is federally enforceable. For the Unit 6 boiler, the facility accepted SO_2 and PM_{10} limits consistent with the utilization of coal with a lower sulfur content.[46] These limits are in addition to existing controls for PM_{10} and NO_X: ESP with flue gas conditioning for PM_{10} control, and Separated Overfire Air Technology (SOFA) with Low NO_X Concentric Firing System (LNCFS) for NO_X

[46] See Table 7: Nelson Summary of AOC Limits (page 23) of the State's progress report.

control. The AOC (unnumbered) compliance deadline for the Unit 4 boiler was on October 26, 2017, and for the Unit 6 boiler was on January 21, 2021. The EPA final approval date was December 21, 2017 (82 FR 60520).

3. CAIR and CSAPR

In 2005, the EPA issued CAIR,[47] which participating states could rely on in lieu of BART for EGUs.[48] CAIR was designed to address power plant pollution transported from one state to another via a cap-and-trade system to reduce SO_2 and NO_X emissions as the target pollutants. LDEQ's 2008 regional haze SIP revision relied on participation in CAIR as an alternative to meeting the source specific EGU BART requirements for SO_2 and NO_X.[49] In December 2008, shortly after LDEQ submitted its SIP to EPA, the D.C. Circuit remanded CAIR to the EPA, leaving existing CAIR programs in place while directing the EPA to replace them with a new rule.[50] So although CAIR was remanded, CAIR remained in effect and sources in Louisiana continued to comply with the state and federal requirements associated with CAIR. In 2011, EPA promulgated CSAPR to replace CAIR.[51] In 2012, EPA amended the Regional Haze Rule to allow CSAPR participation as an alternative to source-specific SO_2 and NO_X BART for EGUs on a pollutant-specific basis.[52] CSAPR requires 28 eastern states to reduce power plant emissions that contribute to O_3 and $PM_{2.5}$ pollution in other states. The rule requires reductions in O_3 season NO_X emissions that cross state lines for certain states, including Louisiana, under the O_3 requirements, and reductions in annual SO_2 and NO_X emissions for certain states, not including Louisiana, under the $PM_{2.5}$ requirements. LDEQ established reliance upon CSAPR for O_3 season NO_X as an alternative to meet the NO_X BART requirements for their EGU sources. The EPA set emission budgets for each state covered by CSAPR. Allowances are allocated to

[47] See 70 FR 25161 (May 12, 2005).
[48] See 70 FR 39104, 39139 (July 6, 2005).
[49] See 40 CFR 51.308(e)(4) (2006).
[50] *North Carolina* v. *EPA,* 531 F.3d 896, 901 (D.C. Cir. 2008), *modified,* 550 F.3d 1176, 1178 (D.C. Cir. 2008).
[51] 76 FR 48207 (August 8, 2011).
[52] While that rulemaking also promulgated FIPs for several states to replace reliance on CAIR with reliance on CSAPR as an alternative to BART, it did not include a FIP for Louisiana. (see 77 FR 33642, 33654).

affected sources based on these state emission budgets.[53] Since promulgating the use of CSAPR as an alternative to source-specific BART for EGUs, the EPA has promulgated an update to the CSAPR program with more stringent budgets.[54] The CSAPR update revised the O_3 season NO_X budget for Louisiana's EGUs to 18,639 tons NO_X in 2017 and beyond.[55] Participation in CSAPR for O_3 season NO_X is federally enforceable under 40 CFR 52.38.

4. Smoke Management Plan (SMP)

The progress report states that the State is also relying on a Smoke Management Program (SMP) that it adopted (effective July 1, 2012). LDEQ implements controlled and open-burning practices within the state. The Louisiana SMP was designed to assure that prescribed fires are planned and executed in a manner designed to minimize the impacts from smoke produced by prescribed fires. The programs in this measure are generally designed to limit increases in emissions rather than to reduce existing emissions.

5. Additional Federal Measures

The State of Louisiana also considered in its progress report the following ongoing pollution control programs for continuing emission reductions as supplements to the regional haze plan:

- Permitting to ensure compliance wth New Source Performance standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP).
- Prevention of Significant Deterioration (PSD) requirements
- National Petroleum Refinery Initiative.
- Mobile Emissions Regulations.

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[53] The rule provides flexibility to affected sources, allowing sources in each state to determine their own compliance path. This includes adding or operating control technologies, upgrading or improving controls, switching fuels, and using allowances. Sources can buy and sell allowances and bank (save) allowances for future use as long as each source holds enough allowances to account for its emissions by the end of the compliance period.

[54] See 81 FR 74504. On October 26, 2016, we finalized an update to CSAPR that addresses the 1997 O_3 NAAQS portion of the remand as well as the CAA requirements addressing interstate transport for the 2008 O_3 NAAQS.

[55] CSAPR has been subject to extensive litigation, and on July 28, 2015, the DC Circuit issued a decision generally upholding CSAPR but remanding without vacating the CSAPR emissions budgets for a number of states. Louisiana's O_3 season NO_X budgets were not included in the remand. *EME Homer City Generation* v. *EPA,* 795 F.3d 118, 138 (DC Cir. 2015).

- National Petroleum Refinery Initiative

6. EPA's Conclusion on the Status of Implementation of Measures

The EPA proposes to find that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g) regarding reporting the status of implementation of measures in its implementation plan. The State's progress report documented the status of all measures included in its regional haze SIP and it also described additional measures that came into effect since the State's regional haze SIP was completed, including various federal measures. All major control measures were identified in each SIP revision and the strategy behind each control was explained. The State included a summary of the implementation status associated with each measure and adequately outlined the compliance timeframe for all controls.

C. Emissions Reductions from Implementation of Measures

The State presented emission data in its progress report that provided a summary of the emission trends and reductions achieved through the implementation of the BART controls that were required to be installed, operated, and maintained in the regional haze SIP to control the visibility impairing pollutants contributing to haze. The State provided combined annual emission trends of SO_2, NO_X, $PM_{2.5}$, and PM_{10} for all eleven subject-to-BART EGU and non-EGU facilities included in section II.B of this action from 2000 to 2019.[56] The State also provided figures depicting the annual emission trends applicable to each subject-to-BART facility.[57] The overall combined annual emissions for each pollutant trended downward from the baseline since 2008. The State quantified the emission reductions achieved by comparing the five-year average from the baseline (2004-2008) to the five-year average at the end of the first implementation period (2015-2019).[58] The five-year average emission reductions achieved since

[56] See Figure 12: Combined Annual Emissions from Major Stationary BART Sources (page 26) of the progress report.
[57] See Figures 1 to 11 of the progress report (pages 10 to 23).
[58] See Table 8 of the progress report (page 26).

the baseline from the subject-to-BART controls included 13,195 tons NO_X, 41,264 tons SO_2, 1,367 tons PM_{10}, and 356 tons $PM_{2.5}$ (see Table 1).

Table 1: Five Year Average Emission Reductions from BART Sources for 2004-2008 and 2015-2019

Year	NO_X	PM_{10}	$PM_{2.5}$	SO_2
2004-2008 Average	37,532	3,782	2,009	70,902
2015-2019 Average	24,338	2,415	1,652	29,638
Change	-13,195	-1,367	-356	-41,264

In addition to the emission reductions from BART controls, the CSAPR update revised the O_3 season NO_X budget for Louisiana units to 18,639 tons NO_X in 2017 and beyond. The 2019 actual O_3 season emission for Louisiana totaled 17,751 tons NO_X for 88 different sources.[59] The State noted that, along with the replacement of CAIR with CSAPR, there have been many ongoing air pollution programs that supplement the regional haze program since submittal of Louisiana's Regional Haze SIP in 2008. These programs include adoption of a SMP that was effective July 1, 2012, NSPS and NESHAP permitting, PSD regulatory requirements, the National Petroleum Refinery Initiative, mobile emissions regulations, and the National Petroleum Refinery Initiative. Louisiana noted that these additional federal air pollution programs are anticipated to result in even greater emission reductions that could result in further visibility improvement than the programs in place when the 2008 Louisiana Regional Haze SIP revision was submitted to the EPA.

The EPA proposes to conclude that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g) regarding a summary of emission reductions achieved for visibility impairing pollutants. Overall, the State demonstrated the emission reductions achieved for the major contributing visibility impairing pollutants in the State for the first implementation period. Emissions of SO_2, NO_X, and PM, the top three main contributors to regional haze in Louisiana, have all decreased from the 2002 baseline levels through 2019. Overall visibility conditions have improved as a result of these reductions together with decreases from outside of the state.

[59] Source: U.S. EPA Clean Air Market Division www.epa.gov/airmarkt/.

D. Visibility Conditions and Changes

Louisiana included in its progress report the annual average visibility from 2001 to 2018 for the twenty percent best (least impaired) and twenty percent worst (most impaired) days at Breton National Wilderness Refuge.[60] Although visibility conditions have varied from year-to-year, the progress report showed that Breton has displayed an overall improvement in visibility since 2001.[61] LDEQ reported that Breton showed improved visibility from the 2000 to 2004 baseline[62] during the worst days for the most current period (2014 to 2018).[63] Breton area also showed improvement from the baseline on the twenty percent best days and satisfied the goal of no visibility degradation for the first implementation period. The progress report showed that the visibility at Breton during the 2014-2018 period was 5.02 dv below the 2000-2004 baseline for the twenty percent worst days and 1.31 dv below the baseline for the twenty percent best days as reflected in Tables 2 and 3 below.

Table 2: Visibility at Breton National Wilderness for Twenty Percent Best Days (Five-Year Avg.)

Class I Area	Baseline (2000-2004) (dv)	Most Recent (2014-2018) (dv)	Most Recent Minus Baseline (dv)
Breton National Wilderness Refuge	13.12	11.81	-1.31

*A negative sign indicates a reduction from the baseline

Table 3: Visibility at Breton National Wilderness for Twenty Percent Worst Days (Five-Year Avg.)

Class I Area	Baseline (2000-2004) (dv)	Most Recent (2014-2018) (dv)	Most Recent Minus Baseline (dv)
Breton National Wilderness	25.73	20.71	-5.02

[60] The *most and least impaired days* in the regional haze rule refers to the average visibility impairment (measured in dv) for the twenty percent of monitored days in a calendar year with the highest and lowest amount of visibility impairment, respectively, averaged over a five-year period (see 40 CFR 51.301). In this report, when we refer to "best days" we mean "least impaired" and when we refer to "worst days" we mean "most impaired."

[61] See Table 15: Visibility Index at Breton of the progress report (pages 31).

[62] Note that the period for establishing baseline visibility conditions is 2000-2004. The Breton IMPROVE monitor did not meet the data capture requirements of the Regional Haze Rule for the 2000-2004 monitoring period; however, data from a nearby monitoring site, the Gulfport SEARCH site, was used to supplement the Breton monitoring data to establish the baseline.

[63] Progress reports for the first implementation period used specific terms to describe time-periods. "*Baseline visibility conditions*" refers to conditions during the 2000 to 2004 time-period. "*Current visibility conditions*" refers to the most recent five-year average data available at the time the State submitted its progress report for public review. "*Past five years*" refers to the five-year average previous to the five years used for *"current visibility conditions."*

Refuge			

*A negative sign indicates a reduction from the baseline

When comparing the 2018 RPG of 22.51 dv with the observed five-year visibility trends, Breton is realizing more visibility improvement than needed to meet the 2018 RPG. The average visibility condition at Breton during the 2014 to 2018 period for the twenty percent worst days was 1.8 dv below the 2018 RPG. Therefore, the EPA proposes to conclude that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g) with respect to visibility conditions at Louisiana's Class I area.

E. Emission Tracking

In its progress report, the State presented National Emission Inventory (NEI) total combined anthropogenic emissions for the criteria pollutants for 2002, 2008, 2011, 2014, and 2017. The baseline 2000 to 2004 period was represented by the 2002 NEI. The most recent NEI inventory available at the time of development of the progress report to represent current emissions was from the draft 2017 NEI. The overall total combined anthropogenic emissions of CO, SO_2, NH_3, PM, NO_X, and VOC were depicted in a stacked bar chart[64] in the progress report and showed a total emission decrease from the 2002 base year period to the most recent 2017 inventory year. The State noted, however, that there was a slight increase in emissions in 2008 in the chart that could be attributed to normal growth that preceded the implementation of controls from the 2008 Regional Haze SIP. A more significant increase in combined anthropogenic emissions occurred in 2011. The State attributed that increase to a change in methodology using the EPA Oil and Gas tool for estimating emissions from oil and gas production facilities. That tool was developed for the 2011 NEI and used for all subsequent NEIs. A downward trend was shown from 2011 to 2017, which the State made as the focus of the progress report. The State noted that despite the significant increase in 2011, the 2014 and 2017 NEI total combined anthropogenic emissions reduced to lower than the emissions in 2008 when the original SIP was

[64] See Figure 13: NEI Anthropogenic Emissions Totals (page 27) of the progress report.

submitted. That trend reflects the implementation of controls from the Louisiana Regional Haze SIP. Also, the 2017 NEI emissions were well below the 2002 NEI baseline totals.

In order to further evaluate the effectiveness of the 2018 Regional Haze SIP for the most recent five-year period, LDEQ compared categorized anthropogenic emission inventories for 2011 and 2017.[65] The pollutants inventoried included SO_2, NO_X, NH_3, VOC, CO, $PM_{2.5}$, and PM_{10}. The inventories were categorized for all major visibility-impairing pollutants under major anthropogenic source groupings. The anthropogenic source categorization included point and non-point sources, on and non-road mobile sources, and area sources. A reduction in the total emissions for each of the criteria pollutants was observed over the six-year period from 2011 to 2017 as seen in Table 4. The pollutants of concern for haze in Louisiana, SO_2, NO_X, and PM_{10} were collectively reduced by nearly 505,305 tons.

Table 4: Comparison of 2011 to 2017 Anthropogenic Emissions (tpy)*

Inventory Year	VOC	NO_X	$PM_{2.5}$	PM_{10}	NH_3	SO_2	CO
2011	426,115	558,235	125,749	395,370	56,742	274,588	1,195,493
2017	260,746	331,115	78,455	252,843	45,959	141,930	788,471
Δ 2011-2017	-165,369	-227,120	-47,294	-145,527	-10,783	-132,658	-407,022

*Table 11 of the progress report SIP submittal showed incorrect emission reduction totals for 2011 and 2017, but the corrected totals calculated from Tables 9 and 10 are shown in this table.

A similar comparison of the 2017 NEI emissions and the 2018 projected emissions provides a look at the change in actual emissions to what was originally projected for 2018 for the purpose of Regional Haze SIP development. As shown in Table 5 of this action, the total NEI actual emissions from all criteria pollutants was less. The NEI actual emission reductions surpassed the projected emissions for VOC, NO_X, $PM_{2.5}$, SO_2, and CO significantly. The total PM_{10} emissions were not reduced as dramatically as projected, but the State noted that was likely impacted by the increase in oil and gas emissions unaccounted for at the time of the 2008 Regional Haze SIP revisions. The actual 2017 NEI emissions for NO_X and SO_2 totaled 515,805 tons less than what was projected for 2018. That difference far outweighs the higher actual tons

[65] See Tables 9 to 11 (page 28) of the progress report.

of PM_{10} emissions than projected for PM_{10} because sulfate and nitrate particulate from SO_2 and NO_X emissions make up 83% of the composition of the light extinction contributing to haze at Breton.[66]

Table 5: Comparison of 2017 NEI Actual Emissions and 2018 projected emissions (tpy)

Inventory	VOC	NO_X	$PM_{2.5}$	PM_{10}	NH_3	SO_2	CO
2017 NEI actual Emissions	260,746	331,115	78,455	252,843	45,959	141,930	788,471
Projected 2018 Emissions	399,975	535,080	84,581	99,933	56,839	453,770	1,367,027
Δ 2017 NEI - Projected 2018	-139,229	-203,965	-6,126	152,910	-10,880	-311,840	-578,556

The EPA proposes to conclude that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g). The State tracked changes in emissions by category across the entire emission inventory and the results showed that the emissions from SO_2, NO_X, and PM, the main contributors of regional haze in Louisiana, have all decreased since the 2008 SIP submittal. The 2011 to 2017 analysis included the most recent five-year period for which data was available. These data indicated that overall emissions of all visibility impairing pollutants reduced. SO_2, NO_X, and PM emissions have continued to show a downward trend since 2011, which supports that the controls included as part of the 2008 Regional Haze long-term strategy were effective in reducing emissions. The EPA concludes that the State presented an adequate analysis tracking emission trends for the key visibility impairing pollutants across Louisiana.

F. Assessment of Changes Impeding Visibility Progress

The State indicated in the progress report[67] that there were no significant changes in anthropogenic emissions that limited or impeded progress in reducing pollutant emissions and improving visibility at the State's one Class I area that were not already contemplated in the 2008 Louisiana Regional Haze SIP and subsequent revisions. Breton National Wilderness Refuge has shown overall downward trends in visibility impairment as a result of the implemented controls in Louisiana and other states. The State's current analysis of emission

[66] See Table 16: Total Light Extinction and Composition at Breton (page 33) of the progress report.
[67] See Pages 41-42 of the progress report.

reductions and categorized inventories presented in the progress report showed that no significant changes in emissions within the state occurred to further impede or adversely affect the visibility improvement at Breton. It was also determined that additional emission reductions from other states were not necessary to address visibility impairment at Breton for the first implementation period. No significant emission changes from sources outside of Louisiana were identified that limited or impeded progress in reducing pollutant emissions and improving visibility at Breton. EPA proposes to conclude that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g) regarding assessing any changes that could impede visibility progress.

G. Assessment of Current Strategy to Meet RPGs

In its progress report, the State assessed the strategies in the Louisiana Regional Haze SIP and subsequent revisions. The State determined that the strategies were sufficient to enable Louisiana and other states with Class I areas affected by emissions from Louisiana to meet all established RPGs. Louisiana's Regional Haze SIP revisions,[68] which EPA finalized approval on December 21, 2017,[69] outlined control measures to improve visibility by reducing anthropogenic emissions of SO_2, PM_{10}, $PM_{2.5}$, and NO_X. Specific regional haze BART controls and enforceable limits were imposed on eleven major stationary sources (three non-EGU sources and eight EGU sources) and resulted in a decrease in the target pollutants. Actual point source emissions from 2002-2017 were reduced as follows; SO_2 emissions were reduced by 61% (214,227 tons); NO_X emissions were reduced by 55% (177,384 tons); PM_{10} emissions were reduced by 34% (10,212 tons); and $PM_{2.5}$ emissions were reduced by 23% (9,458 tons). Currently, Breton National Wilderness Refuge is achieving greater visibility improvement than its 2018 RPG.[70] Based on available monitored data, Breton is realizing more visibility improvement than needed to meet its

[68] See October 27, 2016, proposed approval (81 FR 74750) for the BART determinations for non-EGU facilities; the May 19, 2017, proposed approval (82 FR 22936) for the BART determinations for EGU facilities, and the July 13, 2017, proposed approval (82 FR 32294) for BART determination for Nelson Unit 6.
[69] See December 21, 2017, final approval (82 FR 60520) of these SIP revisions which became effective on January 22, 2018.
[70] See Table 15 of the progress report (page 31).

2018 RPG. The current visibility trendline is 1.8 dv below the respective 2018 RPG of 22.51 dv from the baseline conditions and visibility is continuing to improve.

LDEQ acknowledged in the progress report that sources in Louisiana have the potential to impact one Class I area in Arkansas, Caney Creek Wilderness Area. No specific emissions from Louisiana sources were identified in Arkansas' plan that would prevent or inhibit reasonable progress at Caney Creek or any other mandatory federal Class I areas in Arkansas. Emissions from Louisiana were below the 2018 projected levels relied on for planning by Arkansas for the first planning period. Arkansas stated in its August 8, 2018, Regional Haze SIP Revision that Arkansas is already on track to meet or exceed the established reasonable progress goals for Caney Creek.[71] When comparing the revised 2018 RPG with the observed five-year visibility trend, Caney Creek is already realizing more visibility improvement than needed to meet the revised 2018 RPG. The visibility index at Caney Creek during the 2012-2016 period (the most current five-year period at the time of the submittal) was 20.64 dv, which is 1.83 dv below the 2018 revised RPG of 22.47 dv, and visibility is continuing to improve.

The EPA proposes to conclude that the State has adequately addressed the applicable provisions under 40 CFR 51.308(g) to assess the current strategy to meet the RPGs. The State has assessed the implementation plan in place at the time that its progress report was submitted, and we find that the implementation plan as it currently exists is sufficient to enable the state of Louisiana and other nearby states to meet their RPGs. The realized and planned controls and reductions that form the current strategy for the first implementation period are sufficient to meet the RPGs as established in the Louisiana Regional Haze SIP (including all revisions). Breton National Wilderness Refuge in Louisiana is currently meeting the 2018 RPG for the twenty percent worst days and shows that the goal of no visibility degradation for the twenty percent

[71] See Figure 17: Caney Creek Reasonable Progress Goals (page 42) of the progress report. See spreadsheet, *visibility-progress.xlsx*, provided at https://www.adeq.state.ar.us/air/planning/sip/regional-haze.aspx.

best days is also being achieved. Caney Creek Wilderness area in Arkansas is also on track to achieve its visibility reduction goals.

H. Review of Visibility Monitoring Strategy

The monitoring strategy for regional haze in Louisiana relies upon participation in the IMPROVE[72] network, which is the primary monitoring network for regional haze nationwide. The IMPROVE network provides a long-term record for tracking visibility improvement or degradation. LDEQ currently relies on data collected through the IMPROVE network to satisfy the regional haze monitoring requirement as specified in 40 CFR 51.308(d)(4) of the Regional Haze Rule. In Louisiana, there is one active IMPROVE site monitor (AQS ID: 22-071-9000) located in Orleans County and represents the 5,000 acres of the Breton National Wilderness Refuge.

In the progress report, LDEQ reported observed visibility data annually for the Breton National Wilderness Refuge to the EPA from the IMPROVE dataset.[73] LDEQ tracked the annual visibility index at Breton from 2001 to 2018 and reported five-year visibility trends for comparison of baseline, current, and natural conditions. LDEQ continues to track these visibility trends at Breton and identified no future changes in this network. Baseline and natural conditions for visibility progress comparisons were made using the 2008 SIP revision, when available. Otherwise, baseline[74] and natural conditions values were also from the IMPROVE dataset.[75] The Breton IMPROVE monitor also quantified aerosol species that were related to visibility impairment. The aerosol species collected at Breton for regional haze purposes included ammonium sulfate, ammonium nitrate, organic mass, elemental carbon, fine soil, coarse mass,

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[72] See 64 FR 35715 (July 1, 1999). Data from IMPROVE show that visibility impairment caused by air pollution occurs virtually all the time at most national parks and wilderness areas. The average visual range in many Class I areas (i.e., national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the western United States is 100-150 km, or about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In most of the eastern Class I areas of the United States, the average visual range is less than 30 km, or about one-fifth of the visual range that would exist underestimated natural conditions.
[73] http://vista.cira.colostate.edu/DataWarehouse/IMPROVE/Data/SummaryData/RHR_2018/SIA_group_means_12_19_2p.csv.
[74] The State noted that the Breton IMPROVE monitor did not meet the data capture requirements of the Regional Haze Rule for the 2000-2004 baseline monitoring period, so data from a nearby monitoring site, the Gulfport SEARCH site, was used to supplement the Breton monitoring data to establish the baseline.
[75] http://vista.cira.colostate.edu/IMPROVE/Data/NaturalConditions/NaturalConditionsII_Format2_v2.xls.

and sea salt. The major cause of reduced visibility at Breton was identified as sulfate particles, formed principally from SO_2.[76] The EPA proposes to conclude that the State has adequately addressed the applicable provision under 40 CFR 51.308 for a visibility monitoring strategy.

I. Determination of Adequacy of Existing Implementation Plan

Louisiana provided a negative declaration stating that the Louisiana Regional Haze SIP is adequate and no further substantive revisions are needed at this time. Since the original Louisiana Regional Haze SIP submission in 2008, the State submitted three subsequent SIP revisions to fulfill its commitment to address all of the deficiencies identified in our two previous June 7, 2012, and July 3, 2012, actions on the 2008 SIP. Specific controls and enforceable limits were imposed on eleven major stationary sources that resulted in a significant decrease in visibility impairing pollutants. These controls, approved by EPA, included BART reductions on eight EGU sources and three non-EGU sources. When considering the SIP requirements that we approved in these SIP revisions along with the visibility and emission information provided in the progress report; it is clear that the implementation plan is adequate to meet its emission reductions and visibility goals for the first implementation period. Current visibility conditions in Louisiana have improved beyond the 2018 RPGs. Visibility has also improved at the one Arkansas Class I areas affected by Louisiana sources. The current emission trends show that SO_2, NO_X, and PM emissions (the main contributors to regional haze in Louisiana) have all been decreasing since the baseline period. The emission reductions necessary for meeting the established RPGs were achieved and exceeded the established goals. Because the SIP will ensure the control of SO_2, NO_X, and PM emission reductions relied upon by Louisiana and other states in setting their RPGs, the EPA is proposing to approve Louisiana's finding that there is no need for revision of the existing implementation plan to achieve the RPGs for the Class I areas in Louisiana and in nearby states impacted by Louisiana sources. We, therefore, propose to approve

[76] See Figure 15 and Tables 16 through 23 (pages 32-40) of the progress report.

Louisiana's negative declaration under 40 CFR 51.308(h) that no further substantive revisions are needed.

J. Consultation with Federal Land Managers

The Regional Haze Rule requires the State to provide the designated Federal Land Managers (FLMs) with an opportunity for in-person consultation at least sixty days prior to holding any public hearings on a SIP revision for the first implementation period. Louisiana invited the FLMs to comment on its draft progress report on October 29, 2020, which was sixty days prior to the public review comment period on December 28, 2020. No comments were received from the Federal Land managers. The EPA proposes to conclude that Louisiana has adequately addressed the applicable FLM provisions under 40 CFR 51.308(i).

III. EPA's Proposed Action

The EPA is proposing to approve Louisiana's regional haze five-year progress report SIP revision (submitted March 25, 2021) as meeting the applicable regional haze requirements set forth in 40 CFR 51.308(g). The EPA is also proposing to approve Louisiana's determination of adequacy under 40 CFR 51.308(h) that no further substantive revisions are needed. Lastly, the EPA is proposing to find that Louisiana fulfilled its requirement in 40 CFR 51.308(i) regarding state coordination with FLMs.

IV. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to approve state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq*.);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq*.);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed rulemaking does not have tribal implications and will not impose

substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Best Available Retrofit Technology, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Regional haze, Sulfur dioxide, Visibility, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq*.

Dated: July 15, 2021.

David Gray,
Acting Regional Administrator, Region 6.

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